DOCKET FILE COPY ORIGINAL

RECEIVED

MAY 18 1993

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

OFFICE OF THE GOVERNOR

STATE OF MONTANA

MARC RACICOT
GOVERNOR

STATE CAPITOL
HELENA, MONTANA 59620-0801

RECEIVED

MAY 17 1993

FCC MAIL ROOM

May 12, 1993

Donna Searcy, Secretary
Federal Communications Commission
1919 M Street NW, Room 222
Washington DC 20554

Re: PR Docket No. 92-235

Dear Ms. Searcy:

Please accept the enclosed comments in response to the Commission's Notice of Proposed Rule Making No. 92-235. As our comments indicate, the proposed rules would have a tremendous financial impact on the State of Montana and its political subdivisions. The proposed rules, as they stand, would inevitably cripple our very ability to serve the public safety needs of Montanans.

We hope the Commission will accept our comments and modify its proposed rules so that rural states, counties, and cities may continue to provide essential services without unnecessary financial burdens.

Sincerely,

Marc Racicot

MARC RACICOT
Governor

Enc.: Comments of The State of Montana (9 copies)

No. of Copies rec'd 0+9
List A B C D E

TELEPHONE: (406) 444-3111 FAX: (406) 444-5529

BEFORE THE

FEDERAL COMMUNICATIONS COMMISSION

WASHINGTON, D.C. 20544

PR Docket No. 92-235

In the Matter of

Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them

To: The Commission

COMMENTS OF THE STATE OF MONTANA

The State of Montana hereby submits the following comments in response to the above-captioned Notice of Proposed Rule Making. The proposed rules would require significant change by all private land mobile radio users of frequencies between 150 and 512 MHz. As one such user, the State of Montana opposes certain provisions of the new rules, supports others, and wishes to recommend alternatives in keeping with the Commission's stated goals in this action.

The State of Montana is a licensee of frequencies in the Special Emergency and all Public Safety radio services. It operates three large radio networks in the Police, Highway Maintenance, and Forestry Conservation services, plus additional small systems. Its systems are comprised of 128 mobile relays, 100 fixed bases and control stations, 54 operationally fixed stations, and over 4,000 mobile units. Practically all operations are within the 150-512 MHz band.

Considered as a single area of operations, Montana is geographically large and sparsely populated. Its population of 800,000 is spread over 147,000 square miles of terrain ranging from heavily forested mountains to sprawling plains. Radio system design for this vast amount of variable terrain requires careful planning and an intimate knowledge of its topography.

Immediate Effects of the Proposed Rules

The State of Montana acknowledges and supports the Commission's goals in this Proposed Rule Making: To increase channel capacity in this premium radio spectrum; to promote more efficient spectrum use; and to simplify existing policies governing land mobile radio. However, it cannot support the Commission's proposed new technical and operational standards which would place an onerous burden upon it and its political subdivisions.

The proposed rules lay-out a two-phase program for conversion of all land mobile radio between 150 and 512 MHz to narrowband channels; ultimately requiring total replacement of all equipment currently in use. The first phase is of immediate and direct interest to us due to its financial impact with minimal return. The second phase would end with a deadline of January 1, 2012 for Montana and is far enough in the future to allow us to amortize existing investments, plan for true narrowband technology, and evaluate technologies as they become available. In contrast the first phase, with a deadline of January 1, 1996, would require a tremendous investment as explained below in exchange for relief of the minimal frequency congestion we experience.

Based on conservative figures, the State of Montana estimates it would be required to expend $10.9 million to comply with the

Commission's phase one proposal by 1996. In addition, operational costs would increase by an estimated $1.3 million annually. The State's political subdivisions would be required to expend an almost equal amount, imposing a total compliance cost of nearly $25 million upon Montana's public safety community through the next three years.

The majority of these costs are associated with the proposed reduced transmitter power levels. Considering the reduced power levels proposed and the number of mobile relays in use today and by applying accepted radio engineering models based on height-above-average-terrain (HAAT)[1], we conservatively estimate that comparable coverage would require five (5) times as many mobile relays just to cover the same terrain for the same number of mobile units. Nearly two-thirds of our existing relays would be required to be operated at the lowest power level allowed under the new rules and simplistic emitted radiated power (ERP) limitations would discourage sound system design with directional antennas.

Wide-area networks in mountainous terrain are discouraged under the proposed rules to the point of making them practically impossible. In discussing reduced ERP and HAAT limits, the Commission parenthetically notes that "[s]ystems requiring greater geographic coverage could build additional sites" (NPRM 92-235 at 20, footnote). We question whether it was the Commission's intent to quintuple the number of fixed sites in states such as Montana in exchange for frequency reusability even though spectrum is readily

---

[1]. The Modified Egli formula was used to estimate range for existing sites based on the HAAT method described in Part 88.429. Range was then estimated at power levels proposed in Part 88.429 and replacement ratios calculated.

available.

Beyond the prohibitive costs of accommodating new power limitations, the State of Montana is convinced that transmitter deviation reductions will, as proposed, limit the range of existing systems, reduce audio power output, and jeopardize paging systems used widely by public safety in the state. These relatively inexpensive transmitter modifications would affect system performance adversely; requiring additional fixed infrastructure and new equipment optimized for narrower channels.

The State of Montana is further concerned that 5 kHz channelization in the VHF band will inevitably lead to incompatibilities with the Federal government and its 12.5/6.25 kHz plan and will encourage adoption of different technologies between the 150, 450, and 800 MHz bands. Such differences will complicate wide-area systems where the propagation characteristics of one band are sought for forested terrain, for example, and those of another for urbanized areas.

State of Montana Recommendations

1. **We recommend Part 88 be modified to eliminate ERP/HAAT limitations for public safety and add strict service area coverage limits as have been adopted by most NPSPAC 800 MHz regions.** We support the Commission's efforts to make efficient use of the radio spectrum and recognize that narrower band technology is in our future. Computer technology is widely available which allows transmitter coverage estimations and encourages conservative design practices. We suggest the Commission adopt appropriate [illegible]

account for the mobile environment. While computer models are valuable for estimates, field studies must be allowed to take precedence over estimates.

2. **We recommend the Commission abandon its two-stage transition plan to narrow band.** Given that its true goal is 5 and 6.25 kHz channels and that the first step toward that goal is prohibitively expensive with little return for rural, wide-area systems, the transition from today's wide-band FM to more efficient ACSB, spread spectrum, or digital technologies is best done directly, without expensive interim requirements. For an estimated cost of $25 million by 1996, Montana public safety agencies would receive no operational benefits, little spectrum relief, and more complicated radio systems.

3. **We recommend a single-stage transition to narrowband technology with a schedule as outlined in §88.433.** Between now and January 1, 2012, the State of Montana will be able to amortize its investments and plan for the next generation of land mobile radio.

4. **We recommend interoperability between federal, state, and local public safety agencies be given paramount consideration.** Eventual adoption of 6.25 kHz channels from 150 to 512 MHz will help prevent conflicts between technologies of different bands, incompatibilities with the Federal government, and abandonment of APCO Project 25 standards. Wide-area and interagency systems often rely on the propagation characteristics of VHF, therefore mobile relays must be specifically allowed for narrowband VHF channels as they are for those in other bands.

5. **We support the proposed market-based exclusivity options,**

inasmuch as they affect Montana, as an attempt to establish a natural resource economy for the radio spectrum. Exclusive use overlay (EUO) would have little impact on most Montana public safety users, as they are generally exclusive users today. It would offer them future guarantees in that regard, in exchange for certain application burdens and is seen as a positive step.

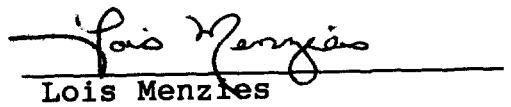
6. Finally, we recommend the Commission adopt a method by which regional public safety plans can be developed and given the force of law as has worked so well in NPSPAC 800 MHz allocations nationwide.

Summary

The State of Montana supports the stated goals of the named proposal. As they stand today, we oppose its technical and operational standards as unworkable for large, rural systems and financially burdensome for our state and its political subdivisions. We recommend replacement of the ERP and HAAT limits with more applicable service area coverage limits and adoption of recognized models for their measurement. We recommend a direct

Respectfully submitted,

STATE OF MONTANA
Department of Administration

By: 

Lois Menzies
Director
Capitol Station
Helena MT 59620